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ABSTRACT

The Carnegie Corporation's mission is to continue Andrew Carnegie's philanthropic preoccupations with promoting education and world peace. In this essay, retiring Carnegie Corporation President David A. Hamburg provides a detailed accounting of his stewardship of the foundation since 1983, when he set forth new program directions in the context of drastic changes in the American family and society and, more broadly, the Cold War and the worldwide transformation in science and technology. The essay outlines an agenda for national and international attention in the future, focusing on the need for communities of the world to reconcile their differences and cooperate in creating systems for the prevention of mass violence. Also described is Corporation support for research and projects to clarify the positive conditions for ensuring healthy child and adolescent development, to make this knowledge widely understood throughout the country, and to strengthen the capacity of key institutions, beginning with the family and schools, to meet the developmental and educational needs of children from the prenatal period to age fifteen. Through grant programs to improve the education and healthy development of children and youth, improve superpower relations, strengthen human resources in developing countries, and promote democratic processes throughout the world, the foundation seeks to prevent the effects of disadvantaged environments. Changes due to technological advance and global economic integration raise educational questions, in which people must learn to adjust their knowledge and skills to new circumstances and learn to prepare for change itself. (JPB)

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A Perspective on Carnegie Corporation's Program, 1983–1997

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A Minute of Appreciation

David A. Hamburg

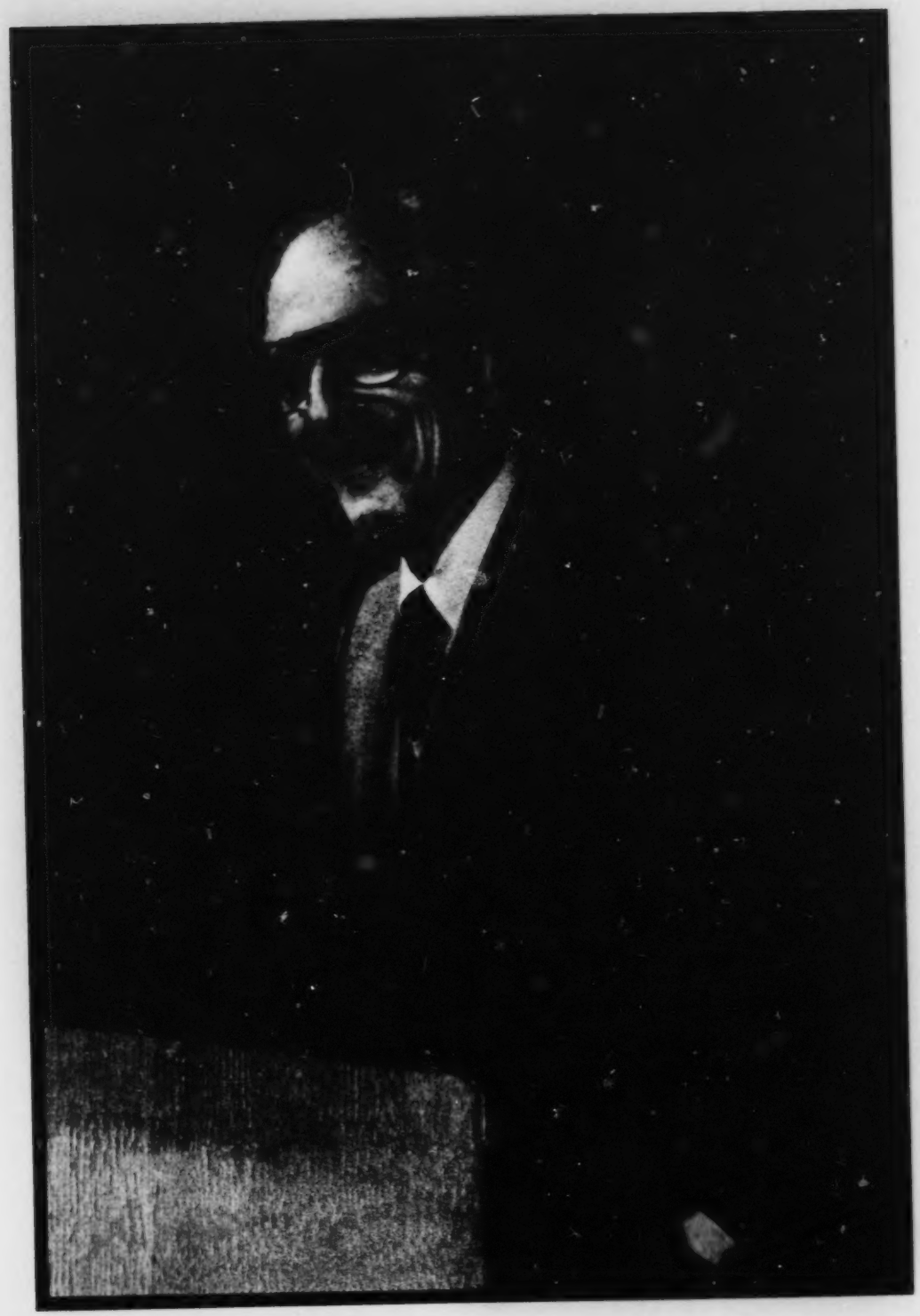
The trustees of Carnegie Corporation of New York wish to record their profound appreciation for the contributions of David A. Hamburg, president from December 1982 to June 1997.

David Hamburg has brought to the presidency a passion for education and peace that is reflective of Andrew Carnegie's vision and that has infused the Corporation's grantmaking over the past fourteen years. The board is unanimous in expressing its admiration and gratitude for his accomplishments on behalf of the Corporation.

During his tenure, David has guided the foundation's programs examining the education and healthy development of children from birth through early adolescence; addressing critical issues of international security and arms control, especially nonproliferation and the prevention of mass violence; fostering human resources in developing countries, mainly in sub-Saharan Africa; and strengthening democracy in the United States, Africa, and the formerly communist countries of Europe.

David has led the formation of intersectoral and multidisciplinary task forces and commissions to address complex problems facing U.S. society, and indeed all human society, in ways that have contributed to informed public policy and public understanding. His leadership has furthered an approach to problem solving, grounded in research, that stresses prevention and remediation and that exemplifies social engagement, deep conviction, and creativity.

In all these domains David has exercised great courage, skill, and tact. Proud to call him colleague and friend, the trustees expect to derive continuing benefit from his wisdom and counsel as he assumes the role of president emeritus.



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A Perspective on Carnegie Corporation's Program, 1983–1997

David A. Hamburg

A Perspective on Carnegie Corporation's Program, 1983–1997

In establishing Carnegie Corporation in November 1911, Andrew Carnegie wrote in his first letter of gift: "To the trustees of Carnegie Corporation of New York we set out the purpose of this foundation to promote the advancement and diffusion of knowledge and understanding among the people of the United States." To this he added, "Conditions upon the earth inevitably change. Hence no wise man will bind trustees forever to certain paths, causes, or institutions. I disclaim any intention of doing so. On the contrary I give my trustees full authority to change policy or causes hitherto aided from time to time, when this in their opinion has become necessary or desirable; they shall best conform to my wishes by using their own judgment."

Here Carnegie was clearly indicating his faith in the board, giving it a fundamental role in guiding the institution and in using its own judgment to make adjustments in light of new circumstances and especially new opportunities. It was my privilege to serve on this board before I became president, and I believe its members have made substantive contributions to an extent that is unusual among foundations. Throughout the fourteen years I have served as the Corporation's president, the trustees have been highly collegial, constructive, and forward looking. They have been deeply engaged in the work of the foundation while providing important oversight and policy direction. Many have participated actively on Carnegie task forces, commissions, and councils and in special meetings on critical issues.

By the same token, no significant accomplishment could have been made without the hard work of a professional staff. The staff has been highly effective in program development, finance, and administration—receptive to good ideas and innovations while applying high standards of appraisal and fair procedures in decision making.

So much has changed in these fourteen years! For example, annually the number of proposals received has grown from approximately 2,000 to about 5,100; the number of grants has increased from 85 to 343, and the grants budget has swelled from about $13 million to $59 million. Indeed, 51 percent of all the dollars awarded in the Corporation's history since 1911 were granted during this period. The Corporation's assets, currently valued at about $1.3 billion, are 3.25 times the value they were at the end of 1982.

Accounting and record keeping, once done manually, are now being managed on an advanced computer network, and audiovisual and computer-based materials have joined the growing list of published works, reflecting ever more widely Andrew Carnegie's precept that "only in popular education can man erect the structure of an enduring civilization."

While Carnegie gave maximum latitude in the charter, when I assumed the presidency in 1983 I felt we should pay serious attention to his great themes and adapt them to current circumstances. The preoccupations of Carnegie's personal philanthropy were peace and education, and they have been ours over these past fourteen years.

The following is my attempt at an overview of Carnegie Corporation's experience during this extraordinary time. The wealth of that experience is such that I have had to be selective and indeed idiosyncratic. It is simply not possible to capture the richness of the tapestry in all its detail. The best I can do is provide some highlights and seek a few governing principles and lessons for the future. These should convey the flavor of some of the problems we have tackled and the approaches we have found useful.

From the 1980s through the mid-1990s, two crucially formative and comparatively neglected phases of the life span constituted a major focus of the foundation's work. These are the first three years of life, beginning with the prenatal period, and early adolescence, covering ages ten to fifteen. A second focus was the potential threats to world peace posed by weapons of mass destruction and the relationship between the two superpowers and, most recently, by interethnic violence. A third was the challenge of strengthening democratic institutions and processes in several parts of the world, including the United States. Finally, the foundation pursued a number of special projects that fall outside the main program areas, in order to maintain flexibility and openness to new possibilities.

A recurrent theme linking the Corporation's programs is the prevention of rotten outcomes. From child and adolescent development to international relations, the underlying logic is essentially the same. Prevention begins with anticipation, even long-range foresight. In this effort, research can clarify the main paths to a particular kind of rotten outcome; it can identify the major risk factors that enhance the likelihood of a highly undesirable situation and point to steps that can be taken to counteract or avoid the risk factors. Attention can be given not only to desired changes in individual behavior but to pivotal institutions that can shape behavior away from risk factors and dangerous directions. Thus, in our grant program on children and youth, the focus on the prevention of rotten outcomes led us to explore the positive conditions under which it is possible to meet the essential requirements for healthy development—mainly through the cooperative efforts of pivotal institutions that have the salience and the capacity to do the job. So, too, in seeking to avoid the deadly conflicts leading to mass violence, we sought ways in which governments, intergovernmental organizations, and the institutions of civil society could help to build favorable conditions in which different human groups can learn to live together amicably.

An Educational and Developmental Strategy for Children and Youth

In the past fourteen years, the Corporation has made a concerted effort to advance the nation's understanding of child and adolescent development and foster positive outcomes for children and youth in the face of drastic changes in the American family and society. This program has been ably chaired by Vivien Stewart.

During the 1980s, an important consensus

began to emerge within the scientific and professional communities on ways that parents and others could cooperate in meeting the developmental needs of children and adolescents. Our aim at Carnegie Corporation has been to clarify this scientific and professional consensus and make it widely understood throughout the country. We have done this through grants for research and innovation and the sponsorship of special study groups that have made practical recommendations for the improved treatment of children and youth. In these activities, the Corporation has tried to clarify the essential requirements for healthy child and early adolescent development and their implications for lifelong learning, health, and decency. We have linked each phase to the next, constructing a developmental sequence of experiences, opportunities, and interventions that can foster constructive, long-term development. That effort has led us to explore in depth a set of pivotal institutions that have a daily opportunity to meet these essential requirements and to seek ways of strengthening their capacity to do so in the powerful context of a transforming global economy. Beyond this, we have examined the help that might come from the powerful institutions of government, business, science, and associated professions.

In its focus on meeting the developmental needs of children and adolescents, we utilized the wonderful, century-long history of the Corporation's involvement in education to stimulate and foster a national education reform movement that could be sustained over decades. An early decision of ours was to focus primarily on public education at the elementary and secondary school level and on the preschool years. As a practical matter, it was essential to examine all the main factors that influence learning, in and out of school. One of my earliest slogans was "education does not begin with kindergarten but with prenatal care."

At the elementary and secondary level, we used education in mathematics, science, and technology as our entering wedge—both for the intrinsic value of such education in promoting curiosity and problem solving and for the practical significance of such education in the emerging technical world of the global economy. We paid serious attention to the quality of child care and preschool education as a fundamental underpinning of subsequent learning and concluded that the nation badly needs a public commitment to preschool education comparable to that already made to elementary, secondary, and higher education.

Our approach evolved in distinctive ways. We built our efforts on a strong knowledge base to the extent possible, drawing on the biological and behavioral sciences. We supported research to fill in the knowledge gaps and sought to relate this knowledge base to real-world problems. We fostered communication between scientists and practitioners in education and health and encouraged excellent working models that applied the new knowledge in communities. We supported systematic assessment of these creative innovations with a view toward scaling up across the nation. Lastly, we funded efforts to translate this experience into broader social action as opportunities could be envisioned.

In all of this, we addressed the inextricable linkage of education and health—and the effect of the social environment on both. Children impaired by physical or mental health problems tend to do poorly in school; yet education is a powerful vehicle for shaping health promotion and disease prevention over the entire life span. We also recognized the centrality of teaching in education and therefore—in the great tradition of Andrew Carnegie's commitment to professionalism—sought through various means to upgrade teaching as a profession and, especially in the sciences and mathematics, to improve instruction and learning.

COMPREHENSIVE STUDIES OF CHILDREN AND YOUTH

Throughout the 1980s and during the 1990s, there has been a dynamic interplay between the grantmaking process and the special study groups formed by the Corporation to undertake a close examination of problems addressed in the programs. The grant programs have stimulated, informed, and guided the preparation of the major Corporation reports; the reports, in turn, have highlighted the work of the grantees and further enlarged the pool of ideas brought to public attention.

Between 1986 and 1996, various study groups of experts and opinion leaders addressed the needs of children during specific developmental periods. The Carnegie Council on Adolescent Development, which I led with executive director Ruby Takanishi, focused on early adolescence, ages ten to fifteen. From its work there emerged a number of reports, including *Turning Points* (1989), *Fateful Choices*, by Fred M. Hechinger (1992), *A Matter of Time* (1992), and *Great Transitions* (1995). Of special significance were two books assessing the research evidence on healthy adolescent development and on health promotion in adolescence, *At the Threshold* (1990) and *Promoting the Health of Adolescents* (1993).

The Carnegie Task Force on Meeting the Needs of Young Children, first chaired by Richard W. Riley, then by Eleanor E. Maccoby and Julius B. Richmond, next examined the first three years of life. Its final report, *Starting Points*, was published in 1994.

Finally, the Corporation established the Carnegie Task Force on Learning in the Primary Grades, cochaired by Shirley M. Malcom and Admiral James D. Watkins, which linked early childhood and early adolescence with an investigation of middle childhood. Its report, *Years of Promise*, was released in 1996. Together, these reports cover the entire spectrum of early life, from the prenatal period to age fifteen, and form the basis of a coherent developmental strategy for all the nation's children and youth. All have been widely disseminated to the public and are having an effect on policies and programs throughout the nation. This work has been greatly facilitated by the publications office under the leadership of Avery Russell.

Most of the recommendations urge a realignment of priorities and better use of existing resources — eliminating activities that do not significantly improve care, development, teaching, and learning and redeploying resources to programs that are demonstrably effective. Can we do better than we are doing now? These reports answer yes, emphatically! They show the way to prevent much of the damage now occurring to children and young people.

The Earliest Years. The first few years of life provide the critical opportunity for a decent start. Such a beginning greatly increases the odds for lifelong learning, good health, the acquisition of constructive skills, and the development of prosocial behavior. It is a period when children form the initial human attachments that powerfully shape their possibilities for having decent and fulfilling relationships with others. During these years of growth and development, children need dependable caregivers who will nurture, protect, and guide them and foster their inherent curiosity and enjoyment of discovery. So this initial phase, beginning at the moment of conception, has a strong bearing on a child's entire life. *Starting Points* addressed these needs and formulated four main recommendations for action:

- *Preparation for Responsible and Competent Parenthood:* Such preparation ideally begins within the family, but it also encompasses education in the life sciences during early adolescence and widely available parent education oppor-

tunities in conjunction with prenatal care, primary health care, child care, and Head Start.

- *Health Care: Starting Points* calls for comprehensive prenatal and primary health care with concomitant educational and social services, including early home visits. Of special importance is vigorous public health outreach for early prenatal care augmented by opportunities for young parents to learn how to care for the pregnancy, the baby, and themselves and their future.
- *Child Care:* The report recommends expanded child care opportunities, improved training of caregivers to strengthen the quality of child care services, and wider use of the Head Start model combining parental involvement with disease prevention and stimulation of prosocial as well as cognitive skills.
- *Community Mobilization:* Community supports for young children include family–child resource centers; federal, state, and local councils to promote intersectoral cooperation to assess specific needs and formulate ways of meeting them; integration of services in community schools; and local involvement of business, media organizations, and key health and educational institutions.

To follow up on the task force report, the Corporation in 1996 launched the Starting Points State and Community Partnerships, a competitive grants program enabling states and cities to adopt and implement the reforms called for in the report. Ten states and six major cities are currently participating in this effort, led by program officer Michael H. Levine. The cause has been vigorously pursued by the President and also the First Lady, the National Governors' Association, and members of Congress on a broad bipartisan basis. Two and a half years after its publication, the report reverberates in national news magazines, a network television prime-time documentary, and a White House conference.

Middle Childhood. For most children, the long-term success of their learning and development depends to a great extent on what happens to them during the years of promise, from age three to ten. Children fortunate enough to attend a high-quality preschool or child care program and who enter the primary grades with adequate preparation have a better chance of achieving to high levels than those who do not. Children who attend an elementary school that sets high standards and does whatever it takes to see that students meet those standards have a better chance of leaving fourth grade proficient in reading, writing, mathematics, and science. Children whose parents create a home environment that encourages learning and who remain involved in their children's education throughout the years from three to ten earn higher grades than those whose parents are uninvolved. Children from communities that provide parents with supportive programs aimed at enhancing young people's healthy development and achievement and that offer out-of school opportunities emphasizing learning do better academically than those who have not had such opportunities.

These are the essential findings of *Years of Promise,* which asserts that all children can learn to a higher level when they are adequately prepared for school and are challenged as well as supported by families, schools, the health sector, community organizations, and the media. The report calls for expanded public and private financing to improve the quality and availability of early care and educational opportunities for three-, four-, and five-year-olds. Finally, *Years of Promise* suggests how powerful sectors of society — government, business, universities, and the major professions — can help the frontline institutions do a better job of meeting the vital needs of child development and education.

Like the other Corporation reports, the work of this task force was enriched by the results of pioneering innovations in elementary education

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—especially the School Development Program spearheaded by James P. Comer, professor of child psychiatry at Yale University, and the model elementary school program, Success for All, developed by Robert E. Slavin of Johns Hopkins University. Their pioneering work has illuminated the path to major improvements in the earliest years of formal education for all children, shaping crucial attitudes and basic skills of lifelong significance.

Early Adolescence. Early adolescence, between the ages of ten and fifteen, is a time of profound biological transformation and social transition characterized by exploratory behavior. Much of this behavior is adaptive and expected for this age group, but carried to extremes, and especially if it becomes habitual, it can have lifelong adverse consequences. Many dangerous patterns, in fact, commonly emerge during these years: substance abuse, premature and unprotected sex, the use of weapons, alienation from school. The Carnegie Council on Adolescent Development sounded a powerful alarm about this sadly neglected but fateful phase in its concluding report, *Great Transitions.*

Young adults on an effective developmental path must find a valued place in a constructive group; learn how to form close, durable human relationships; earn a sense of worth as a person; achieve a reliable basis for making informed choices; express constructive curiosity and exploratory behavior; find ways of being useful to others; believe in a promising future with real opportunities; cultivate the inquiring and problem-solving habits of mind necessary for lifelong learning and adaptability; learn to respect democratic values and the elements of responsible citizenship; and altogether build a healthy lifestyle.

The work of the council consistently addressed ways in which these requirements can be met by a conjunction of frontline institutions that powerfully shape adolescent development, for better or worse — families, and also schools, community-based organizations, and health care organizations. Working models of supportive programs for young adolescents can be observed in some communities, a few of which have been scrutinized by evaluative research. The council highlighted these and other social support strategies that show promise of setting young people on the path toward healthy, problem-solving adulthood. Three that recognize the link between education and health can be built into the curriculum of middle schools or after-school programs:

- *Life Sciences Curriculum:* The life sciences, particularly human biology, can tap into the natural curiosity of students who are already intensely interested in the changes taking place in their own bodies. The study of human biology can illuminate ways that high-risk behavior, especially during adolescence, bears on health throughout the life span. A curriculum developed at Stanford University offers much promise for this purpose.
- *Life-Skills Training:* The vital knowledge obtained from the life sciences curriculum is crucial, but, to be effective in shaping behavior, it should be combined with training in interpersonal and decision-making skills. These skills can be useful in resisting pressure from peers or from the media to engage in high-risk behavior; they can increase self-control, reduce stress, and help to overcome feelings of isolation. Research shows that such skills can be taught through systematic instruction with practice through role playing.
- *Adult Mentoring and Peer Mediation:* Mentoring can be a powerful way to involve caring, supportive adults with adolescents who tend to be isolated, preparing them for social roles that earn respect and encouraging them to persist in education. It is important that a mentoring program be integrated with other resources in the community, particularly for high-risk youth who

sometimes have multiple problems. Programs led by trained students, such as one-on-one tutoring, peer counseling, and other forms of mutual aid, can benefit students who are having academic problems. Research shows that when these programs are firmly established they are also good for teachers, and the classroom climate is likely to improve.

The council's unique functions in clarifying this crucial, neglected phase will be followed up by the National Research Council of the National Academy of Sciences, Stanford University, and the Center for Advanced Study in the Behavioral Sciences.

THE CENTRALITY OF TEACHING

Success in upgrading our education system for the long term depends on a profession of well-educated and highly respected teachers prepared to assume new authority and responsibility. Any serious inquiry into education reform, therefore, must recognize the centrality of teaching. If we are serious about a fundamental and enduring upgrading of American education, we must find ways to strengthen the capability and accomplishment of teachers. In practice, this implies the need for a broad, multifaceted effort to enhance teaching as a profession. Such an effort will involve attracting very able people and providing them with a substantial education in subject matter as well as the principles of human learning and their applications. It means asking them to demonstrate their competence and maintain it in ways that manifestly help students and thereby earn public respect. At the same time, it requires offering clear social and economic rewards consistent with a highly valued profession; opportunities for professional development throughout the entire span of a career; a working environment that is conducive to active learning; and a structure of opportunity that makes it possible for the profession to reflect the full diversity of our nation. This approach was addressed in the 1996 report of the National Commission on Teaching & America's Future, *What Matters Most*, jointly supported by the Rockefeller Foundation and Carnegie Corporation.

In 1987 the Corporation took the initiative in creating a National Board for Professional Teaching Standards to implement the recommendations of *A Nation Prepared*, a major report of the Carnegie Forum on Education and the Economy. Organized with extensive participation from teachers and other leaders, the board aims to establish high standards for what teachers need to know and be able to do and to certify those who meet the standards. Under the leadership of Governor James B. Hunt, Jr., of North Carolina, the board is thriving after a decade of dedicated efforts. Plans are to offer certificates to lead teachers in approximately thirty fields, covering about 40 percent of the teaching work force. In his 1997 State of the Union message, President Clinton singled out this board for special mention and urged strong support for its efforts.

COLLABORATION IN THE SERVICE OF EDUCATION

In the early 1980s, the Corporation set out to connect the scientific talent of universities, colleges, corporate laboratories, scientific organizations, and national laboratories with the needs of elementary and secondary schools, thereby strengthening national capability for broad education in the sciences — physical, biological, and behavioral. We particularly sought ways of linking science educators with the science-rich sectors of our society. A nationwide assessment after several years of experience made encouraging observations, and these efforts have spread.

The linkage of science-rich to science-poor sectors has been aimed at both teacher education and curriculum development. Improvements

in education can flow from the collaboration of frontline teachers with subject matter experts in physics, chemistry, or biology and also with psychologists and other scholars in the field of human learning. Such collaborations, moreover, can be an important step in the general direction of incorporating teachers of science into the scientific community. Examples of linkages are summer institutes for teachers, Saturday activities for teachers throughout the school year, summer jobs in science for teachers, and the preparation of curricular materials including advanced audiovisual materials by collaborative groups.

The groundbreaking reports of Project 2061, a program of the American Association for the Advancement of Science led by the noted science educator F. James Rutherford, have received Corporation support since 1985. More than a decade ago, the framers of Project 2061 (named for the year Halley's comet returns) recognized that the science taught in the nation's schools does not adequately prepare future citizens for life in a science-based, high-technology world. The project is an ambitious effort to recast precollegiate education in science, mathematics, and technology from kindergarten through the twelfth grade. Particularly with its reports, *Science for All Americans* (1989) and *Benchmarks* (1989), this effort has had a very stimulating effect on the creation of national standards as well as directly improving the teaching of science. More recently, under the leadership of Bruce M. Alberts, the National Academy of Sciences has emerged as a major focal point for the upgrading of science education with its publication of national science education standards.

The Corporation has also fostered functional links between higher educational institutions and elementary and secondary schools — and even with preschool education programs. In short, we have supported a continuum of education, from prenatal care to the highest levels — with cooperative efforts along the way.

In the long run, the vitality of any society and its prospects for the future will depend on the quality of its people — on their knowledge and skill, health and vigor, and the decency of their human relations. *Preventing* much of the damage now occurring will have powerfully beneficial social and economic impacts, resulting in a more effective work force, higher productivity, lowered health costs, lowered prison costs, and so much relief of human suffering! We can fulfill the promise of these precious early years if we have the vision and the decency to invest responsibly in *all* our children and thereby in the future of humanity.

Human Conflict: Preventing Disaster

In 1983 the Corporation returned to one of the most fundamental of all Andrew Carnegie's interests, his passion for peace. In his determined, persistent, even zealous quest — a kind of desperate search — he explored many avenues. He created four foundations[1] and three peace palaces[2] and made proposals for the arbitration of international disputes and courts of various kinds, including the World Court, as well as an international police force. His personal philanthropy reflected a unique combination of ideas, institution building, and social action, the spirit of which the Corporation has tried to uphold during the years 1983 to 1997.

Avoiding Nuclear War

In my first annual report essay of 1983 laying out a framework for the Corporation's new grant program, I asked, "Given the immense risks and costs of the nuclear arms race, is it at least conceivable that the basic relations between the [United States and the Soviet Union] might

change for the better in the decades ahead? If so, should somebody be thinking about ways to get from here to there, and on what basis?" I reported then that the Corporation would "make a few grants to explore and delineate long-term possibilities for improving the basic U.S.–Soviet relationship, taking into account their view of us as well as our view of them." I also cautioned that "to do this in a truly thoughtful and realistic way without romantic illusions will be very difficult. Yet the subject is so important for the human future that it can scarcely be ignored."

At that time, the world was in great danger — from a severe exacerbation of the cold war precipitated by the Soviet invasion of Afghanistan. It was our desire to mobilize the strongest possible talent, drawing upon the deepest knowledge and the most systematic research, to understand the sources of danger and ways out of this predicament — and to do this by novel conjunctions of talent across disciplines and national boundaries.

The first set of large-scale grants under the new Avoiding Nuclear War program, chaired by Frederic A. Mosher, was aimed at strengthening centers of research, especially to prepare wide-ranging analyses of the possible paths to nuclear war. How could a nuclear war actually happen? Then came similarly wide-ranging analyses of possible preventive interventions with respect to each of the paths, giving special attention to the problem of accidental and inadvertent nuclear war, the slipperiest of all slopes. We also made grants to assess the potential consequences of nuclear war — the basic, unprecedented facts of destruction that are at the center of the problem. We sponsored studies on understanding the adversary — how could one intelligently monitor developments in the Soviet Union and eastern Europe? And we invested in a line of inquiry and innovation that had been considerably neglected: crisis prevention.

FROM CRISIS MANAGEMENT TO CRISIS PREVENTION

The Corporation's focus on crisis management and prevention during the cold war has useful implications. Recall the Cuban Missile Crisis of 1963, the most dramatic and dangerous event of the cold war. How lucky we were to get out of it without an unimaginable catastrophe! In a crisis, there is a virtually irresistible temptation to subject the opponent to strong forms of coercive diplomacy, much like an awesome game of "chicken." The likelihood of catastrophic error is great under conditions where there is terrible stress on decision making and where there is the difficulty of controlling far-flung, high-tension operations. Facing this harsh fact, the superpowers gradually came to recognize that it was profoundly in their national interest to move back a respectful distance from the brink of ultimate shared disaster. In short, they developed a regimen for crisis prevention rather than crisis management.

The Corporation's emphasis in crisis prevention was on finding ways to decrease the likelihood that nuclear weapons would be used. Our approach did not assume a great improvement in the relationship between the United States and the Soviet Union; nor did it assume a great decline in the stockpile of nuclear weapons. It simply assumed that each nation could recognize that a nuclear confrontation like the Cuban Missile Crisis is too difficult to manage safely time after time.

The main principles in the crisis prevention approach can be stated concisely: Avoid subjecting each other to nasty, unpleasant surprises; reach agreements to deal with predictably sensitive and potentially explosive situations; clarify vital interests in touchy situations; strengthen institutional mechanisms that provide for the professional exchange of information and ideas on a regular basis regarding issues that could readily become highly dangerous.

The crisis prevention approach has led to broad international interest in confidence-building measures that can be applied to each region of the world. This is one of the valuable lessons we have learned from the immense dangers of the cold war. More generally, it has turned our attention to the mission of *preventing* mass violence altogether.

During the perilous years of the cold war, the West and the Soviet Union gradually and painfully evolved some mutual accommodation rules, both explicit and implicit. Some of these rules were: Avoid direct superpower confrontation; avoid nuclear threats; respect vital interests of the adversary; take care in defining interests that are not grandiose; avoid dehumanization; help the adversary off a dangerous limb if necessary; don't humiliate; keep in mind the common humanity of the adversary, especially in time of stress; widen contacts across adversarial boundaries under favorable conditions to the extent possible. These are useful guidelines to remember in handling future conflicts in the world — indeed, in human relations of every kind.

The superpower leaders, President Ronald Reagan and Secretary-General Mikhail Gorbachev, took a great step forward by making explicit the fundamental concept that nuclear war could never be won and must never be fought. The incredible destructive power of nuclear weapons remains a dreadful part of human reality. Many nations will be sorely tempted to go nuclear in the next century. The facts of nuclear devastation must be widely understood and their meaning profoundly grasped by populations throughout the world.

LINKING INDEPENDENT EXPERTS WITH THE POLICY COMMUNITY

One of the great privileges of a foundation like Carnegie Corporation is the opportunity to stimulate, support, and facilitate the work of scientists, scholars, and other experts of the first rank. This, in turn, opens up the possibility of the foundation's playing a kind of brokerage function, fostering mutually beneficial contact between policymakers in various sectors — government, business, the media — with independent experts in major problem areas.

The Corporation's concept was that it could be mutually beneficial for the scientific and scholarly community on the one hand, and the policymaking, policy-advising community on the other, to have dependable and convenient ways to interact with each other over an extended period of time with respect to a shared set of interests and concerns. Our grants have consistently tried to bring to policymakers the most highly respected, objective, independent, nonpartisan information available. The intent has been to strengthen the informational underpinnings for decision making over the long term, beyond any current policy question.

During the cold war and since then, we convened independent experts at the request of government leaders in the Reagan, Bush, and Clinton administrations on such topics as arms control; nuclear crisis prevention; scientific and scholarly exchanges with the Soviet Union; emerging opportunities in the Soviet Union in Gorbachev's early years and, concomitantly, opportunities to loosen the Soviet yoke in eastern Europe; the role of nongovernmental organizations in conflict resolution; reform of the United Nations; prospects for Russia and other states of the former Soviet Union; and new approaches to preventing deadly conflict.

With respect to Congress, Corporation grantees, especially the Aspen Institute's Congressional Program under former senator Dick Clark, have brought independent experts on international problems together with members from both parties and the Senate and House on a continuing basis over the years. The most

remarkably successful format has been a carefully prepared retreat extending over several days, focusing on an important problem in international relations. These meetings have consistently been highly substantive and essentially free of partisan rancor. Such linkage efforts have reached beyond our shores to include parliamentarians of western and eastern Europe as well as Russia and Ukraine.

Unforgettably, we had the privilege of linking Mikhail Gorbachev with Western experts during his crucially formative early years in office. In 1985 a remarkable new generation of leadership took control in the Soviet Union. Building on my contacts with leaders of the Soviet scientific community that led to an enduring relationship with Gorbachev, the Corporation launched a vigorous attempt to expand cooperative projects between its U.S. grantees and their Soviet counterparts. The Soviet scholars and analysts who were involved in these contacts included several who were key advisors to Gorbachev in the early years of his reform efforts.

As the Gorbachev era began to take shape, we encouraged special studies to take account of the new developments and especially to consider the possibilities for major worldwide changes in U.S.–Soviet relations. We were able to facilitate communication across adversarial boundaries by supporting U.S.–Soviet study groups on improved relations between the two countries, arms control, crisis prevention, third-world flash points, eastern Europe, and building democratic institutions. There is reason to believe that these joint explorations of vital issues by specialized experts on both sides contributed to the Soviet "new thinking" and to the momentous changes in international relations that ensued.

Our experience makes clear that there is a useful role for the scientific and scholarly communities in international conflict resolution, usually acting through nongovernmental organizations yet maintaining open lines of communication with governments. The singular advantage is the ability of these communities to:

- Draw on the science base for accurate information, sound principles, and techniques.
- Act flexibly in exploring novel or neglected paths toward violence prevention and conflict resolution in an open-minded spirit.
- Build relationships among well-informed people who can make a difference in attitudes and in problem solving across adversarial boundaries.

In the years ahead, there is good reason to expand the role of scientists and scholars, generating deeper understanding of human conflict, expanding education on these critical issues, and putting the knowledge to use in conflict situations.

PREVENTING PROLIFERATION

A major grant in early 1992, organized by senior program officer Jane Wales, brought specialists on cooperative security and conflict resolution together with experts on nonproliferation regimes, enforcement, and verification as they apply to nuclear, chemical, biological, and high-technology systems. Senators Sam Nunn and Richard Lugar participated actively as members of the steering committee for this enterprise, together with John Steinbruner, then head of the Foreign Policy Program of the Brookings Institution, and William Perry, codirector of Stanford University's Center for International Security and Arms Control, who in 1994 was appointed U.S. Secretary of Defense.

The work of this Prevention of Proliferation (POP) committee contributed substantially to the Nunn–Lugar Amendment of 1992 to the Soviet Nuclear Threat Reduction Act of 1991, providing for the joint dismantling of Soviet nuclear weapons and otherwise for the reduction of proliferation risks in and around the former Soviet

Union. The amendment was a remarkable example of legislative leadership by Senators Nunn and Lugar in translating research into policy and practice. In 1992 key research findings presented in a report on new nuclear dangers posed by the breakup of the Soviet Union were reported to the POP committee by its principal author, Ashton Carter, at that time director of the Corporation-supported Center for Science and International Affairs (CSIA) at Harvard University. Stimulated by the report, *Soviet Nuclear Fission*, the two senators forged a bipartisan initiative to provide U.S. assistance in mitigating the dangers highlighted in the CSIA study. When Carter became assistant secretary of defense and Perry assumed leadership of the Department of Defense, they worked with Nunn, Lugar, and others in implementing this landmark legislation. Over the years, they built the Nunn–Lugar legislation of today: $2 billion going into many large engineering projects, military-to-military contacts, defense conversion efforts, officer housing and retraining, weapons and fissile material safeguards, and anti-brain drain grants. Thousands of Americans are at work with their counterparts in the former Soviet Union on these projects every day. They will leave a legacy of cooperation long after their tangible efforts — including the complete denuclearization of Ukraine, Kazakstan, and Belarus — have been felt.

PREVENTING DEADLY CONFLICT

In 1994 the Corporation changed the name of its program on international security to Preventing Deadly Conflict, chaired by David C. Speedie III. The program puts a sharp focus on explicit, systematic ways to prevent disasters rather than patching up the damage after the fact. There are now four areas of emphasis involving:

- An examination of the causes of deadly ethnic, nationalist, and religious conflicts between or within states and the circumstances that foster or deter their outbreak.
- Support of nongovernmental organizations in preventing violence: through analysis; convening and directly fostering mutual accommodation; and training emerging leaders and community groups in concepts and techniques of conflict resolution.
- A continuing effort to strengthen democratic institutions as nonviolent mechanisms for coping with conflicts in the former Soviet Union and eastern and central Europe, which have immense explosive potential.
- An exploration of prospects for more robust efforts by the United States, Russia, and other major weapons suppliers to curb the proliferation of advanced weaponry that threatens to raise the stakes dangerously in ethnonationalist conflicts.

CARNEGIE COMMISSION ON PREVENTING DEADLY CONFLICT

The grantmaking activities in the Preventing Deadly Conflict program are closely related to the Carnegie Commission on Preventing Deadly Conflict, which was formed in 1994 with a membership of sixteen international leaders and scholars long experienced in conflict prevention and conflict resolution. The commission is cochaired by Cyrus R. Vance and myself, with Jane E. Holl as executive director. It has a distinguished advisory council consisting of thirty-six scholars and practitioners from a variety of countries.

Because the commission is an international, not an American, resource, there are burgeoning relationships with international partners, especially reflected in a series of regional forums in different parts of the world with regional partner institutions. These meetings have several purposes: to stimulate thinking worldwide about the prevention approach; to examine regional conflicts and regional solutions that may be widely applicable elsewhere; and to illuminate the agenda of the commission for a

broad international audience.

We are taking a long-term view of violent conflicts likely to emerge in the world, assessing the functional requirements of a system for preventing mass violence and considering ways in which such a system could be implemented. A body of knowledge that is put into action by trained and experienced practitioners striving to prevent mass violence could improve the lives of millions in the same way that medical knowledge and public health practice prevent diseases that have previously caused terrible epidemics.

Prevention is best thought of not only as avoiding undesirable circumstances, but also as creating preferred alternatives. In the long run, we can be most successful in preventing ethnic, religious, and international wars by not only focusing on ways to avert direct confrontation between hostile groups but also by promoting democracy, market reform, and the creation of civil institutions that protect human rights.

The commission is producing a series of reports, background papers, and other materials, culminating in a final report to be disseminated worldwide in November 1997. The report will serve as a guide to preventive policies and actions at national and international levels. Afterwards there will be a two-year follow-up period for further dissemination and implementation. The recommendations will consider many elements of the international community, among them the democracies, the United Nations, regional organizations, the business community, the global scientific community, educational and religious organizations, the media, and nongovernmental organizations concerned with conflict. Only with the active participation of all these groups can we approach the vision of an international system for preventing deadly conflict. All must come to see that an ounce of prevention is worth a megaton of palliation later.

STRENGTHENING DEMOCRACY IN THE FORMER SOVIET UNION AND ELSEWHERE

In a world full of ethnocentrism, prejudice, and violent conflict, there is a vital need for core democratic values to resolve ethnic and religious conflicts and to prevent their escalation to violence. Although the history of each region has left a distinctive legacy of cultures, languages, and religions, fundamental democratic principles applied in ways that fit indigenous circumstances can be useful to all.

The Corporation has supported efforts that have assisted in the development of effective democratic institutions in the former communist world, not only for their own sake, but because a society that is open and responsible to its own citizens is more likely to be a trustworthy partner in cooperative security efforts, since that openness makes its intentions more discernible and any dangerous recidivist tendencies more detectable.

The Strengthening Democratic Institutions project, based at Harvard University's John F. Kennedy School of Government and led by Graham T. Allison, has been a dynamic and valuable source of practical advice for those concerned with building democratic institutions in Russia, both in the central government and in some of the more progressive regions. Its origins go back to the early Gorbachev era and its relationships then with emerging democratic reformers who are today among the most respected leaders of Russian society.

There is little precedent for well-organized international efforts to help substantially with this process of democratization, yet experience suggests that it is not impossible. If democracy is perceived as an optional preoccupation of self-righteous democratizers — or even as an intrusive activity of sugar-coated neoimperialists — then all this is much ado about nothing. But if democracy is viewed as a powerful and con-

structive mechanism for resolving the ubiquitous ongoing conflicts of our highly contentious human species, then the challenge becomes vital and the opportunity precious.

Strengthening American Democracy

American democracy began not only with a revolutionary war, but with the adoption of some revolutionary concepts such as inalienable rights and the consent of the governed. For more than two centuries, this very large and complicated democracy has been evolving. It is now in the midst of adapting to drastic technological, economic, and social changes. Fundamental to its success historically has been the capacity of American institutions to preserve and implement a set of core democratic values.

Carnegie Corporation's grantmaking over the past fourteen years has sought to strengthen these values and institutions in a variety of ways. There have been manifestations of this in virtually every program, such as our efforts to strengthen the public education system. Most of this work, however, has gone on in the Special Projects program chaired by Barbara D. Finberg, which has largely focused on efforts to enhance participation in elections; campaign finance reform; congressional reform; the role of universities in tackling serious social problems; and the relationship between democracy and the media.

Carnegie Commission on Science, Technology, and Government

One major thrust of the Special Projects program between 1988 and 1993 was the Carnegie Commission on Science, Technology, and Government, cochaired by Joshua Lederberg and William T. Golden, with David Z. Robinson as executive director and commission member. Its main purpose was to seek ways in which government in the United States can encourage and use the contributions of the national scientific community. The nation needs effective mechanisms, both governmental and nongovernmental, for analyzing thoroughly and objectively what science can do for society and how society can make sure that scientific and technological capabilities are humanely used.

In approving the commission, the Corporation's board recognized that our future depends heavily on science and technology and that the government must systematically take into account science and technology in its decision-making processes. Therefore, the commission scrutinized fundamental patterns of organization and institutional arrangements of both federal and state governments, asking whether they were adequate to this task and, if not, how they might be strengthened. Its work has had continuing reverberations in the executive branch, the Congress, and the judiciary as well as state governments. The recommendations of one of its reports led directly to a fundamental reconstruction of the White House science and technology apparatus under President Bush.

Adapting American Democracy to World Transformation

The power of technological advance and global economic integration to change social conditions is a critical issue for the democracy agenda. The economic and social changes fostered by the global spread of information and telecommunications — combined with advances in research and development on space, energy, materials, and biotechnology — are likely to be profound and pervasive. These problems have been studied by the National Academy of Engineering under the leadership of its former president, Robert M. White.

Historically, adjustments to technological advances over long periods have resulted in social and economic transformations on a vast scale. This is especially likely when fundamental new technologies are unfolding across the entire frontier of scientific and engineering research and are undergoing rapid dissemination throughout the world. The impacts over the long term have generally been positive. Along the way, however, there have been massive dislocations. In this context, it is worth recalling the severe disruptions of the industrial revolution that had much to do with the emergence of communism, fascism, and the Nazi catastrophe.

New worldwide opportunities have brought with them profound stresses that will affect human development in ways hard to foresee. This is an urgent subject for monitoring, assessment, research, and public education and one that is highly relevant to the democracy agenda of the early twenty-first century. An important question is how to understand the relationship of personal economic insecurity and the public's increasing distrust of government as well as declining civic participation.

Ray Marshall, former U.S. secretary of labor, now a professor of economics and public affairs at the Lyndon B. Johnson School of Public Affairs, University of Texas, is leading a multifaceted examination of the factual and analytical bases for policies that can adapt to transforming changes. A question being addressed is whether serious social problems are caused or exacerbated by some fundamental economic trends: dislocations associated with technology, especially information technology; demographic and labor market shifts; and the intensification of competition facilitated by information and transportation technology that makes markets more global in scope.

In our time, the effectiveness of the policies, institutions, and economic arrangements that helped the United States have the longest span of broadly shared prosperity in history from the late 1930s until the early 1970s has eroded. During this period, Americans with limited levels of formal education who were willing to work hard could earn middle-class incomes and acquire the financial means to provide more education and the promise of a better future for their children. Especially during the 1950s and 1960s, families could be supported by only one wage earner, and most mothers could stay home with their children if they wished.

Enumerating the achievements of this century, President Clinton in his 1997 inaugural address said, "Along the way, Americans produced the great middle class and security in old age, built unrivaled centers of learning and opened public schools to all, split the atom and explored the heavens, invented the computer and the microchip, and deepened the wellspring of justice by making a revolution in civil rights for African Americans and all minorities and extending the circle of citizenship, opportunity, and dignity to women."

But the frustrations and uncertainties of a complex, rapidly changing world can trigger scapegoating of highly visible groups like minorities, immigrants, and government officials, who have become targets of irrational, hateful, or extremist responses. These challenges have serious implications for democratic societies throughout the world. It is crucial to seek factual and analytical bases for policies and practices that could help us to cope with such problems and take advantage of the immense, emerging opportunities in an equitable way.

The concepts of governance appropriate to the mid-twentieth century have not been easily adapted to the information economy of the late twentieth. On topic after topic, old notions of governance are challenged. Political orientations are evolving, often in ways that transcend the

traditional boundaries of the nation-state. The internationalization of information, capital, and labor creates new questions about public action.

A popular perception today holds that government is somewhere between inept and evil. Are there some minimal, essential functions that government must perform — functions about which there is broad agreement? On the one hand, pragmatism identifies and takes for granted minimum essential functions of government and provides a basis for action when people feel specific pains. On the other hand, a historically ingrained skepticism about concentrations of power lead people to view government as a threat, perhaps a necessary evil. Joseph S. Nye, Jr., dean of Harvard University's John F. Kennedy School of Government, with a group of colleagues is rethinking democratic governance in light of the public's apparent loss of confidence in government in many countries.

The Harvard project is addressing hard questions: What is necessary and appropriate for governments now? What will citizenship mean in the twenty-first century? How should a government try to balance social and economic power in an age in which private labor is less organized and corporate power reaches new heights? What can governments do, or not do, better than for-profit and nonprofit private organizations? Where government does have a crucial role in providing public goods or protecting individual rights, what kind of involvement is most appropriate? How should power be distributed among the levels of government as federalism is reevaluated?

The drastic changes under way also raise educational questions that we have addressed in other contexts: Given the rapidity of sociotechnical change, how can lifelong learning become a reality so that people can adjust their knowledge and skills to new circumstances? As educational institutions more than ever try to hit a moving target as they prepare people for unpredictable circumstances, how can they prepare others for change itself? How can the talent pool be enlarged so that promising people can pursue technically challenging careers, regardless of their socioeconomic background? How does one achieve an informed worldwide perspective in an era of profound interdependence?

The building of democratic institutions is certainly a crucial, albeit complicated and frustratingly slow, component of helping people live together peacefully over the long term.

Strengthening Human Resources in Developing Countries

A very large and important part of the world has received a good deal of attention in Carnegie Corporation's work: developing countries, primarily in sub-Saharan Africa. This program is chaired by Patricia L. Rosenfield. The plight of some African nations illustrates the astonishing paradox of the times, in which truly unprecedented opportunities exist side by side with massive suffering and widespread jeopardy to survival. If developing countries were to slide down a slope of degradation, they could become an incubator for infectious diseases and for hatred, violence, and terrorism as well as a source of accelerating environmental damage and massive refugee flows. So, creative intervention to foster constructive development of poor countries is a matter not only of decent humanitarian values but of enlightened self-interest for the entire world.

Human resources are central to the task of upgrading development opportunities everywhere. To strengthen human resources in poor nations, children and families must have a decent start. This means preventive health care, basic education, families of affordable size, and adequate nutrition. It is essential that the sciences and technological innovation be brought to bear

on ways to meet these fundamental requirements. Altogether, the essential ingredients for development center around knowledge, skill, and freedom. Knowledge is mainly generated by research and development; skills are mainly generated by education and training; freedom is mainly generated by democratic institutions.

Recognizing the immense power of science and technology to foster social and economic development, the Corporation has sought to strengthen national capacity for formulating science, technology, and health policies linked with economic policies. Early on, we recognized that a major impediment to reaching this goal was the isolation of African scientists. We focused first on building networks of African scientists and scholars with their peers in the United States and elsewhere. Working with U.S.-based institutions such as the American Association for the Advancement of Science and the National Academy of Sciences, along with African universities and regional organizations, the Corporation has fostered the use of electronic communications to stimulate the flow of information and a mutual-aid ethic within the scientific community.

Rapid political change is another force transforming the continent. Spurred on by South Africa as well as by events in eastern Europe and the former Soviet Union, the demand for democratic governance and participatory societies has permeated Africa. In the early 1980s, the Corporation sought to build the field of public interest law in South Africa, a key element in the political transformation there. More recently, we have tried to clarify the requisite conditions for sustaining Africa's emerging democracies and to encourage democratic reformers. In the United States, we have aimed to enhance public understanding of progressive changes in Africa and the importance of constructive policies toward the continent.

Much of this approach to developing countries was embodied in a report of an international task force of the Carnegie Commission on Science, Technology, and Government, led by President Jimmy Carter, called *Partnerships for Global Development* (1992). Similarly, the work of the Institute of Medicine, National Academy of Sciences, has been valuable in international health.

THE SECOND INQUIRY INTO POVERTY AND DEVELOPMENT IN SOUTHERN AFRICA

Let me now turn to the extraordinary experience of the Second Carnegie Inquiry into Poverty and Development in Southern Africa, a comprehensive study initiated by the Corporation in 1981. Based at the University of Cape Town, it was directed by Francis Wilson, a distinguished labor economist. He was later joined by Mamphela Ramphele when the government lifted her banishment to a remote area. In 1996 she became the vice chancellor of the University of Cape Town — certainly a dramatic turn of events.

The inquiry drew upon the knowledge and research of a network of scholars and professional persons in law, medicine, economics, religion, and other fields throughout the country, as well as community leaders, teachers, and social workers with firsthand knowledge of poverty and the process of impoverishment at the local level. The operation sought the widest possible participation from all sectors and races in southern African life. Twenty universities in the region participated in the study. It was a rare opportunity for research training and leadership development among black Africans. Its practical recommendations were widely disseminated and influential in South Africa and the United States.

The Second Inquiry was the most exhaustive survey of the causes, consequences, and remedies for poverty in southern Africa since the Carnegie study of poverty among whites carried

out fifty years earlier. The earlier study, popularly known as the Carnegie Poor White Study, succeeded in stimulating actions that helped the Afrikaner poor overcome their conditions and become part of mainstream South African society. Ironically, by the time of the Second Carnegie Inquiry, the Afrikaners, no longer a marginalized group, had become affluent, dominant — and repressive.

The inquiry was not confined to the study of the people of any one race classification in South Africa, although poverty in the 1980s was endured almost entirely by nonwhite Africans. Poverty was studied in relationship to land use, law, food and nutrition, health care, education and training, transport, housing, social welfare, and other quality-of-life indicators. It was also studied for its effects upon families, migrant workers, women, children, and the elderly. Overshadowing all else was the impact of apartheid.

In my view, poverty is partly a matter of income and partly a matter of human dignity. It is one thing to have a very low income but to be treated with respect by your compatriots; it is quite another matter to have a very low income and to be harshly depreciated by more powerful compatriots. Let us speak, then, of human impoverishment: low income plus harsh disrespect. This condition jeopardizes survival in the most fundamental terms. It drastically increases infant mortality, increases the burden of illness in many ways, and shortens life expectancy. But it does even more. It gravely jeopardizes fundamental human attachments to family, friends, home, and community; it undermines self-respect and a sense of belonging; it makes life profoundly unpredictable and insecure; it erodes hope for future improvement and the sense of worth as a human being. This was the impact of apartheid.

South Africa remains important because it carries to the nth power a set of issues that resonate with similar issues elsewhere: prejudice and ethnocentrism, emotionally charged but relatively nonviolent efforts at democratic reform, and a valiant experiment in political and racial reconciliation. It is just possible that the world will learn a lot from South Africa in the next few decades about ways of dealing with the most intense human predicaments.

PROMOTING WOMEN'S HEALTH, EDUCATION, AND LEADERSHIP IN AFRICA

The release of Nelson Mandela on February 2, 1990, and the dissolution of apartheid laws set South Africa on its course toward nonracial democracy and roughly corresponded with the closing of the Carnegie Inquiry. The Corporation then turned its attention to the equally pervasive issue of the unequal status of women throughout South African society, seeking to improve women's rights, health, and organizational capacity. Working jointly with local and external donors, the foundation has helped to build a community of scholars, practitioners, and organizations dedicated to women's issues and create a cadre of effective women leaders, many of whom were elected to parliament in April 1994. Currently, 25 percent of the representatives in South Africa's parliament are women — the second highest level of women's parliamentary representation in the world.

These grants have led to intensified support for activities enhancing women's participation in the economic, social, and political life of other African countries. Upgrading the status of women in these countries can have powerful benefits for economic development, public health, and the restraint of population growth as well as social equity.

Over nearly a decade, the Corporation also supported an excellent collaborative network of West African and American universities using

operational research to address the grave problem of maternal mortality and promote collaboration among physicians, nurses, and health workers at the local level in providing emergency obstetric care so necessary for saving lives — often those of both the mother and the child. This international university cooperation is a useful model for other problems.

Learning to Live Together

The human species seems to have a virtuoso capacity for making harsh distinctions between groups and for justifying violence on whatever scale the technology of the time permits. Moreover, fanatical behavior has a dangerous way of recurring across time and locations. Such behavior is old. What is historically new and very threatening is the destructive power of our weaponry and its ongoing worldwide spread. Also new is the technology that permits rapid, vivid, widely broadcast justifications for violence. This is what will make the world of the next century so dangerous. In such a world, human conflict is a subject that deserves the most careful and searching inquiry. It is a subject par excellence for scientific and public understanding.

Fostering Intergroup Understanding

During the past few decades, valuable insights about these matters have emerged from research on intergroup behavior. Behavioral scientists have illuminated the truly pervasive human propensity to distinguish between in-groups and out-groups. The flow of evidence is impressive in both field studies and in experimental research. Overall, human beings find it exceedingly easy to learn and stimulate a strong sense of "my people." This easily learned response may well have had adaptive functions in human evolution over a very long period, but now it is very dangerous.

Can human groups achieve internal cohesion, self-respect, and adaptive efficacy without promoting hatred and violence? The answer is not obvious. Even though in-group/out-group distinctions are ubiquitous in human societies, including our own, and even though they are deeply ingrained as a part of our ancient legacy, the immense adaptive capacities of the human species should make it possible for us to learn to minimize harsh and hateful distinctions in the future. Much of the Corporation's work addresses ways to fulfill this potential. This brings me to a point of linkage between Andrew Carnegie's two great agendas: peace and education.

There is an extensive body of research on intergroup contact that bears on this linkage. Much depends on whether contact between strange or adversarial groups occurs under favorable conditions. If there is an aura of mutual suspicion, if the parties are highly competitive, if they are not supported by relevant authorities, or if contact occurs on the basis of very unequal status, then it is not likely to be helpful, whatever the amount of exposure. Contact under unfavorable conditions can stir up old tensions and reinforce stereotypes. On the other hand, if there is friendly contact in the context of equal status, especially if such contact is supported by relevant authorities, and if the contact is embedded in cooperative activity and fostered by a mutual-aid ethic, then there is likely to be a strong positive outcome. Under these conditions, the more contact the better — leading to improved attitudes and constructive patters of interaction between groups that were previously hostile.

Some experiments have demonstrated the power of shared, highly valued, superordinate goals that can *only* be achieved by cooperative effort. Such goals can override the differences that people bring to a situation and often have a powerful, unifying effect. The effects are par-

ticularly strong when there are tangibly successful outcomes of cooperation — for example, clear rewards for cooperative learning. These findings have important implications for child-rearing and education.

Pivotal institutions such as the family, schools, community-based organizations, and the media have the power to shape attitudes and skills toward decent human relations or toward hatred and violence. They can make constructive use of findings from research on intergroup relations and conflict resolution. Education everywhere can convey an accurate concept of a single highly interdependent, worldwide species — a vast extended family that shares fundamental human similarities and a fragile planet. The give-and-take fostered within groups can be extended far beyond childhood toward relations between adults and into larger units of organization, even including international relations.

Ethnic prejudice and hatred exist all over the world and are an ancient part of the human legacy. But there are also stunning examples of tolerance, cooperation, and friendship between different groups. What are the conditions under which the outcome can go one way or another? If we could understand such questions better, perhaps we could learn to tilt the balance toward cultures of peace.

Efforts by schools, community organizations, religious institutions, and others to improve relations among diverse youth in the United States require a solid knowledge base from research. In 1996 the Corporation undertook a research initiative on intergroup relations among young people. Grants were made to sixteen institutions for studies to deepen knowledge of the sources and dynamics of racial and ethnic prejudice and to identify approaches that foster intergroup understanding. Mainly school based, these studies are using different methods to obtain information on existing intergroup relations among elementary, middle, and high school students. They will shed light on ways in which young people seek to reduce intergroup tensions and otherwise cope with overt expressions of ethnic, cultural, or religious intolerance among their peers. Some research will try new kinds of experimental interventions to improve the school climate for group interaction. Other studies are attempting to find out which practices within schools can create an atmosphere of mutual respect and positive relations among peers as well as between students and teachers, in which all children can learn well.

In the twenty-first century, it will be necessary in child development to put deliberate, explicit emphasis on developing prosocial orientations and a sense of worth based not on depreciation of others but rather on the constructive attributes of oneself and others. In counteracting our ancient tendencies toward ethnocentrism and prejudice, we will need to foster reliable human attachment, positive reciprocity, friendly intergroup relations, a mutual-aid ethic, and an awareness of superordinate goals. The unfulfilled potential of the media could be helpful in improving intergroup relations, as the Corporation-funded children's television program, *Sesame Street,* has shown.

On the international level, we must seek ways to expand favorable contact between people from different groups and nations. Some measure of comprehension of a strange culture is vital. Educational, cultural, and scientific exchanges can be helpful. At a deeper level, joint projects involving sustained cooperation can provide, if only on a small scale, an experience of working together toward a superordinate goal. There are many ways to break down antagonisms between groups or, preferably, prevent them from arising in the first place. But human societies have been remarkably inattentive to these possibilities.

Those of us who have a deep sense of belonging in groups that cut across ethnic or national lines may serve to bridge different groups and help us move toward a wider sense of social identity. Building such bridges will need many people interacting across traditional barriers on a basis of mutual respect. Nothing in our history as a species has built into the human organism a readiness for such a wider sense of personal identity beyond the primary group. Yet it is possible to engender it, and it will be necessary in the next century to do so on a broader scale than ever before.

As our children and their children learn about the horrifying mass violence that human beings have committed against each other throughout the ages, it is my fervent hope that, at the beginning of the second millennium, the communities of the world will have planted seeds of cooperation and reconciliation that will grow into a system in which mass violence becomes increasingly rare, or even — dare I say it — some day nonexistent. Perhaps Carnegie Corporation, however dimly, through its programs will have contributed in some small way to such a precious legacy for future generations.

Concluding Comment

There is no way I can adequately express my gratitude for the opportunity to lead Carnegie Corporation's efforts during these fourteen years and the depth of my respect for this institution. By the same token, I relish the opportunity of passing the baton to my distinguished successor, Vartan Gregorian, and pursuing my substantive work with enthusiasm.

It has been our privilege to witness and take part in events that offer an extraordinary basis for hope: the end of the cold war; the transition from apartheid to democracy; the worldwide emergence of democracy; the enhancement of opportunities for women; and the most far-reaching advances in science and technology in the history of humanity. There are massive problems to be faced: hatred and violence; poverty and despair; abuse and neglect of children; the plight of developing countries; environmental degradation; and more. Yet the dramatic advances of the past decade give us reason to believe that these problems are not beyond human ingenuity to solve. I fervently hope that the creative work of Carnegie Corporation's "extended family" has contributed to a better human future — and will contribute even more in the next century.

David C. Hamburg

President

Notes

[1] The foundations dedicated to peace are the Simplified Spelling Board (1903), the Hero Fund (1904), the Carnegie Endowment for International Peace (1910), and the Church Peace Union (1914).

[2] The peace palaces are the Palace of Peace at the Hague, the Pan American Union Building, and the Central American Court of Justice (Cartago, Costa Rica).

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Mail: To have information sent to you, write to the Corporation at 437 Madison Avenue, New York, NY 10022, or telephone (212) 207-6289 (Carnegie information center voice mail). The information will be sent by first class mail within one week of receipt of the request.

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